Client Ref. No.: A1051

PTO/SB/01A (08-03)

Approved for use through 06/30/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

litie of invention	<u> ESI</u>	IMATING QUALITY DURING EAF	<u>KLY SYNTH</u>	ESIS
As the below named inventor(s), I/we declare that:				
This declaration is dire	cted to:			
	\boxtimes	The attached application, or		
		Application No., filed on,		4
		as amended on (if application)	able);	4
I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;				
	I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;			
I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.				
All statements made herein of my/our own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.				
FULL NAME OF INVI	ENTOR(S	·)		
Inventor 1 Yea	n-Yow Hw	vang	_ Date:	12-01-2003
Signature: Citizen of: United States				United States
Inventor 2 Bab	ette van A	Antwerpen	Date:	
Signature:			_ Citizen of:	Netherlands
Inventor 3 Rich	nard Yuan	· ·	_ Date:	
Signature:			Citizen of:	Peoples Republic of China
Additional inventors are being named on additional form(s) attached hereto.				

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Client Ref. No.: A1051

PTO/SB/01A (08-03)

Approved for use through 06/30/2006. OMB 0651-0032 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN **APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	EST	IMATING QUALITY DUF	RING EARLY S	SYNTHI	ESIS
As the below named inventor(s), I/we declare that:					
This declaration is direct	cted to:				
	\boxtimes	The attached application,	or		
		Application No. , filed on	•		
		as amended on	_ (if applicable);		
I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;					
I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;					
I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.					
All statements made herein of my/our own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.					
FULL NAME OF INVENTOR(S)					
Inventor 1 Year	n-Yow Hw	ang	Date	e:	
Signature:		-	Citiz	zen of:	United States
Inventor 2 Babe	ette van A	ntwerpen	Date	e:	11/20/03
Signature:	dvM	A	Citiz	zen of:	Netherlands
Inventor 3 Rich	ard Yuan	· .	Date	e:	11/20/53
Signature:	Ju		Citiz	zen of:	Peoples Republic of China
Additional inventors are being named on additional form(s) attached hereto.					

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

POWER OF ATTORNEY OR

AUTHORIZATION OF AGENT

Unassigned

Yean-Yow Hwang

EARLY SYNTHESIS

ESTIMATING QUALITY DURING

Herewith

PTO/SB/81 (02-01)
Approved for use through 10/31/2002. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Application Numb r

First Named Inventor

Filing Date

Title

	Group Ar	t Unit	Unassigned	
	Examine	Name	Unassigned	
	Attorney	Docket Number	15114-067400US	
I hereby appoint:				
☑ Practitioners at Customer Number 26	5059		Place Customer Number Bar Code Label here	
Practitioner(s) named below:				
Name		ration Number		
as my/our attorney(s) or agent(s) to prosecut business in the United States Patent and Tra	te the application ademark Office co	identified above, and nnected therewith.	to transact all	
Please change the correspondence address	for the above-ide	ntified application to:		
☐ The above-mentioned Customer Number		named application to:	•	
OR	•			
☐ Practitioners at Customer Number			→	
☐ Firm or Individual Name				
Address				
Address				
City		State	ZIP	
Country				
Telephone		Fax		
I am the:				
☐ Applicant/Inventor.				
Assignee of record of the entire interest. See 37 CFR 3.71.				
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).				
SIGNATURE of Applicant or Assignee of Record				
Name Derek Minihane Direct	or Intellection	l Property I aw	& Assistant Secretary	
Name Derek Minihane, Director, Intellectual Property Law & Assistant Secretary Signature \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
Date 12/11/03				
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.				
Submit multiple forms in more than one signature is required, see below.				

Burden Hour Statement: This form is estimated to take 3 minutes to complete. Time will vary depending upon the needs of the individual case. Any Comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. 60073991 v1

CERTIFICATE UNDER 37 C.F.R. § 3.73(b)

Applicant:	Yean-Yow Hwang, Babette van Antwerpen, and Richard Yuan
Application	No.: Unassigned Filed: Herewith
For: ESTIN	MATING QUALITY DURING EARLY SYNTHESIS
Altera Corp	oration , a Corporation
(Name of Assignee	
certifies tha	t it is assignee of the patent application identified above by virtue of either:
A. 🛛 Ai	assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel, Frame(s), and for which a copy thereof is attached.
В. 🗌 А	chain of title from the inventor(s), of the patent application identified above, to the current assignee as shown below:
1.	
	The document was recorded in the U.S. Patent and Trademark Office at Reel,
	Frames, or for which a copy thereof is attached
2.	From: To:
	The document was recorded in the U.S. Patent and Trademark Office at Reel
	Frames, or for which a copy thereof is attached.
Copie:	s of assignments or other documents in the chain of title are attached.
The undersi	gned (whose title is supplied below) is empowered to act on behalf of the assignee.
information false statem	and belief are believed to be true; and further, that these statements are made with the knowledge that willful ents, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of States Code, and that such willful false statements may jeopardize the validity of the application or any patent eon.
D-4	12/11/03
Date: Name:	Derek Mirlihane
Title:	Director, Intellectual Property & Assistant Secretary
Signature	D1 C4/1

60073983 vl

Client Reference No.: A1051

ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, YEAN-YOW HWANG of 4231 Suzanne Drive, Palo Alto, California 94306; BABETTE VAN ANTWERPEN of 1116 Doyle Place, Mountain View, California 94040; and RICHARD YUAN of 20199 Suisun Drive, Cupertino, California 95014, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention:	ESTIMATING QUALI	TY DURING EARLY SYNTHESIS		
Date(s) of execution of	Declaration:			
Filing Date:		COPY		
Application No.:	; and			

WHEREAS, ALTERA CORPORATION, a corporation of the state of Delaware, located at 101 Innovation Drive, San Jose, California 95134, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHERE	OF, Assignors have signed their names on the dates indicated.
Dated: 12-01-2003	Yean-Yow Hwang
Dated:	Babette van Antwerpen
Dated:	Richard Yuan

Client Reference No.: A1051

ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, YEAN-YOW HWANG of 4231 Suzanne Drive, Palo Alto, California 94306; BABETTE VAN ANTWERPEN of 1116 Doyle Place, Mountain View, California 94040; and RICHARD YUAN of 20199 Suisun Drive, Cupertino, California 95014, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent;

> Title of Invention: **ESTIMATING QUALITY DURING EARLY SYNTHESIS**

Date(s) of execution of Declaration:

Filing Date:

Application No.:

; and

WHEREAS, ALTERA CORPORATION, a corporation of the state of Delaware, located at 101 Innovation Drive, San Jose, California 95134, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same:

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Dated:	
	Yean-Yow Hwang
Dated: 11/20/03	Barrat
	Babette van Antwerpen
Dated: 11/20/03	Richard Yuan